



DECLARATION FOR TRANSLATION

As a below named translator, I hereby declare that:

My residence and citizenship are as stated below next to my name.

I hereby certify that I am conversant with both the English and Japanese language and the enclosed herewith is a true and accurate English translation of the Japanese patent document JP H09-139794.

FULL NAME OF TRANSLATOR: Fuki Watanabe

TRANSLATOR'S SIGNATURE: Fuki Watanabe Date: 4/13/06

RESIDENCE: Robert E. Bushnell & Law Firm
1522 K Street, Suite 300, N.W., Washington D.C. 20005

CITIZENSHIP: JAPAN

Japanese Patent Publication No.: JP H09-139794
(English Translation)

Detailed Description

[Industrial Application]

[0001] This invention relates to the facsimile apparatus system, which is connected to an information processor such as a computer and facsimile apparatus.

[Description of Prior Art]

[0002] As indicated by Japanese Patent Publication No. S63-13391 and No. H06-98077 for example, a conventional proposal has been to provide the facsimile apparatus with the interface (I/O Port), which would output and input signals (data) between a personal computer (hereinafter referred as PC). By connecting the interface of facsimile apparatus and a PC by cable, it is proposed for the facsimile apparatus to function as the data distribution terminal of a PC, which transfers 'image data' (hereinafter referred the same) such as word documents and pictures inputted by the PC to facsimile apparatus, sends the image data from this facsimile to other facsimile (hereinafter referred as 'partner device'), vice versa stores the image data in the memory of the facsimile from the partner device, and transfers the image data to the memory of PC at the time of request.

[0003] Moreover, the latest functions of facsimile apparatus include: answering machine function of storing the voice messages (voice data) and image data, which were received from the sender side as digital data in the data storing device, outputting the stored image data onto the printing paper, and reproducing the voice data via a speaker; memory functions of storing the image data into the memory, and then sending it out to the partner device; time setting transmitting function (timer transmitting function) of setting up the time of distribution, connecting to the partner facsimile at the requested time and sending the image data stored in said memory.

[0004] Facsimile apparatus are therefore, conventionally provided with the time recording function to record the sending and receiving time of transmissions, as well as with the calender function so as to perform the time management of said answering machine function and timer transmitting function. Additionally, as facsimile apparatus is equipped with the clock function to output such calender information mentioned above, computers including PC are also equipped with

similar clock function so as to perform the data transmission function amongst other PCs.

[0005] Conventionally, in regards to the said clock function, time setting operation was performed by using function keys of every devices.

[Problem to be Solved by the Invention]

[0006] However, although information processors like PC have the backup power supply, said clock function may stop when if conventional AC power supply is being off for a long time of period. On the other hand, facsimile apparatus is conventionally set in a condition connected to AC power supply. In case that there is a power outage, or the socket is taken out of AC power supply, said clock function stops. In either cases, time resetting operation needs to be performed for every devices, and the problem has been that operations of time resetting and adjustment might take some time.

[0007] This invention is provided to solve this problem, enable the time setting and adjustment operations more easily and improve the utility of the computer and facsimile system.

[Means for Solving the Problem]

[0008] In order to solve the said problem, facsimile and computer system as indicated in claim 1, which is the facsimile apparatus equipped with the interface that can be connected to information processors such as computers, is provided with calender function and calender information to both sides so as to set the year, month, date and time. Either one of facsimile or computer is provided with said clock function to set and adjust the date and time. When the time of either one of facsimile or computer has been already set up, and further the time of one side has not been set up yet, the other side is equipped with control means to transfer said calender information.

[0009] Furthermore, facsimile and computer system as indicated in claim 2, which is the facsimile apparatus equipped with the interface that can be connected to information processors such as computers, is provided with calender function and calender information to both sides so as to set the year, month, date and time. Either one of facsimile or computer is provided with said clock function to set and adjust the date and time. In case the time of both facsimile or computer has been already set up, selection means is provided to either side of facsimile apparatus or information processor so as to choose which side of calender information will be the standard, as well as control means to

transmit the standard calender information to the clock means of the other side.

[Embodiment of the Invention]

[0010] The present invention is described more fully with reference to the drawings, in which exemplary embodiments of the present invention are shown. FIG. 1 shows the perspective views of facsimile apparatus 1 connected to information processor, personal computer PC2. FIG. 2 is the functional block diagram of facsimile apparatus 1. FIG. 3 is the functional block diagram of PC2. As indicated in FIG. 1 through FIG. 3, facsimile apparatus (FAX apparatus) 1 of this invention is connected to PC2 through the input/output interface (I/port) 3 of serial interface such as RS-232C or parallel interface, and through the cable 4.

[0011] FAX apparatus 1 is connected to network control unit (NCU) 5 which controls the communication line 6 and exchange device 7 and to partner side's facsimile apparatus 9, or the other PC 8 equipped with the modem with FAX function. The core of Fax apparatus 1 is CPU 10, which is connected by signal bus line to each part of the devices as explained later, and operates the facsimile activities and data communication in accordance with a predetermined communication control procedure.

[0012] Modem 11 adjusts the digital image information into analog signal; transmits the signal from NCU 5 to communication line 6; retrieves the analog signal transmitted from NCU 5 to communication line 6 into digital signal; sends and receives telegraphic every signal. As indicated in FIG. 2, CPU 10 is connected through bus to buffer memory 12, ROM (read-only memory) 13 storing a control program, nonvolatile memory 14 such as EEPROM, RAM (random-access memory) 15 for storing every type of data, CCD scanner 16 for reading original documents, control panel 21 equipped with liquid crystal display section 22, printer 18 for recording means, coding section 17, decryption section 20 and image memory 19.

[0013] Buffer memory 12 temporarily stores every type of data such as image information, which would be sent and received between receiver side's facsimile 9. It consists of transmitting buffer memory 12a which temporarily stores the reception commands and other data including receiver's phone number and name, receiving buffer memory 12b and so on. Nonvolatile memory 14 such as EEPROM consists of: one-touch number memory area 14a; sender telephone number memory area 14b, communication link condition memory area 14c; function memory area 14d which stores every

type of program and data such as communication modes; time memory area 14 which stores sending/receiving time and duration time for transmission; communication management area 14f which stores communication management information. Nonvolatile memory 14 thus, stores receiver's dial number (phone number) and name, receiver's one-touch dial number and data; checks the existence of name registration of sender's facsimile, output of management report and transmission report; checks the volume level of call be sound; stores every setup information such as speaker volume level of facsimile apparatus. Additionally, nonvolatile memory 14 does not lose its contents when the power of facsimile apparatus is turned off.

[0014] Furthermore, RAM 15 temporarily memorizes every type of data at the time of operation. It consists of voice/image memory area 15a, which stores the voice and image data as digital data that are received at the time of activation of answering machine function. CCD scanner 16 reads the image of original documents, while coding section 17 encodes that scanned image data and stores it temporarily to said buffer memory 12 before the time of transmission. As a way of compressing (oppressing) the die length of facsimile signal (rebundancy reduction coding method), such an encoding method focusing on the duration of white signal or black signal of facsimile signal, which is the statistical property of a run length (Modified READ, MR method), may be applied.

[0015] On the other hand, printer 18 records the received image data on the recording paper as a hard copy. As a method of doing this, electrostatic photography recording method may be applied, which forms a latent image in a photo conductor drum by the laser beam, develops it by using a toner, transfer and fix it on the recording paper. The thermal printer method, which prints an image to a thermal paper by using thermal head, may be applied as well. CCD scanner 16 and printer 18 together may serve the copy function, which outputs the image on recording paper duplicated from the original documents. In this case, multi-copy mode is available for outputting more number of copies from one original document. When outputting one or more number of copies from the original document which consists of multi-numbered pages, sort-copy mode is also available to output the duplicated copies in sorted page numbers for each copy.

[0016] Moreover, image memory 19 stores received image data and dot data for recording, by using a dynamic RAM (DRAM) in many cases. In regards to usual transmission operation of facsimile apparatus 1 (real-time recording operation), transmission is first carried out by following a predetermined communication control procedures between facsimile apparatus 1 and facsimile

apparatus 9 (or other PC 8). The transmitted image information is temporarily stored in buffer memory 12 as image data (analog signal). This image is decrypted (expanded) by decryption section 20, expanded to dot image for recording per one-page unit and written into the bit image memory area of image memory 19. After bit expansion is operated with predetermined resolution, this is transmitted to printer 18 to be printed out as images per one-page unit.

[0017] At the time of intercepting usually, the received image data is first stored in image memory 19 as compressed data. At the time of recording (at the time of detail-paper output) then, said same resolution is chosen as the remaining fields of image memory 19 so as to operate bit expansion. Moreover, said image data which is once stored in image memory 19 at the time of interception, and said image data which is received at the time of answering machine activation and stored in voice/image memory area 15, are transferred to external memory device 49 of PC 2 so as to process said image data within PC 2.

[0018] At the time of direct transmission, CCD scanner 16 reads the sender's original manuscript, encoding section 17 encodes it before transmission. At the time of memory transmission, the data of original manuscript read by CCD scanner 16 is encoded and then stored in image memory 19. Afterwards, it is transmitted automatically one by one in order, or transmitted at the set time. Set time transmission (timer transmission) is convenient, when there is a time difference between the facsimiles of the sender and receiver, or when operating group transmission (sending the same document to two or more receivers).

[0019] Furthermore, the image data directly inputted by PC 2 is the encoded data already. Thus, this data is first stored in said image memory 19 of sender side's facsimile apparatus 1, and may be transmitted afterwards. Control panel 21 equipped to facsimile apparatus 1 consists of: display 22 such as crystal liquid display which indicates the procedure status of this facsimile; ten key 23 which is used by the operator so as to manage every type of procedures; function key 24; one-touch registration key 25 (see FIG. 1). Operation of one-touch registration is managed by predetermined operations of said ten key 23 and function key 24, such as inputting receiver's telephone number and name, as well as by predetermined operations of one-touch registration key 25.

[0020] Calender 30 is the clock means equipped with calender functions of such as year-month-date, day of the week and time. It outputs the time-related data (calender information), which

includes the memory of sent/received time of facsimile transmission and duration of transmission time. Conventionally, connecting facsimile apparatus 1 to AC power supply and turning on the power ON, setting menu of time setting feature may be called out by using said predetermined function key 24. Correct time such as year-month-date is inputted and set by using ten key 23. Additionally, setting time of year-month-day, the date of week will be set automatically according to said calender function. Function key 24 and ten key 23 serves the function of time setting means of calender 30.

[0021] Facsimile apparatus 1 also consists of: voice LSI (integrated circuit) 26, which stores such as the response voices for answering machine function; amplifier 27 and speaker 28 which are used for reproducing the recorded voice at the time when answering machine was on; play key for commanding the play mode (not shown in the figures). FIG. 3 illustrates the functional block diagram of PC 2. PC 2 consists of: CPU 40 including such as microprocessor; ROM 41 storing control programs; RAM 42 which stores the memory of every type of data; input/output port (interface) 43. PC 2 is connected to: keyboard 44 and mouse 45 as inputting devices; display 46 (it is the indicator device and may be crystal liquid display) such as CRT as the outputting device; printer 47 and right, left speakers 48a, 48b; facsimile apparatus 1 as the inputting and outputting device; external memory device 49 such as the hard disk drive unit; calender 50 as the clock means equipped with the calender function of setting year-month-date, day of the week and time of the day.

[0022] Calender 50 is offered as PC 2 side's memory and management of data inputting/outputting time, time data such as date and time required for various types of applications (calender information). In regards to time setting procedure of calender 50, conventionally, connecting PC 2 to AC power supply and turning on the power (not shown in the figures), time setting item of setting up menu is called up by using the predetermined function key on keyboard 44, correct year-month-date and time is inputted and set up by using ten key. In addition, the day of the week is automatically set up by said calender function after setting up the time of year-month-date. Function key and ten key of keyboard 4 serves the time setting function of calender 50.

[0023] FIG. 4 shows the time setting process between calender 30 and 50 of facsimile (FAX) 1 and personal computer (PC) 2. First, as the switch of facsimile 1 is turned ON so as to start the time setting process, subsequently it checks the connection between facsimile 1 and personal computer 2 whether data can be transferred (S1) between them. When facsimile 1 and personal computer 2

are not connected so as to transfer data (S1: no), each side sets up calender 30 and 50 of its own. In this case, the time setting process, which will be explained as follows, does not occur but it will be in a standby condition. When facsimile 1 and personal computer 2 are connected so as to transfer data (S1: yes), it is checked whether calender 30 of facsimile 1 is already set up (S2). If calender 30 is not set up (S2: no), the time setting of calender 50 of personal computer 2 (S3) is checked subsequently. When the time of calender 50 is set up already, calender information such as the date and time of calender 50 is transferred from personal computer 2 to facsimile 1 so as to set up the time of calender 30 (S4).

[0024] On the other hand, if the time setting of calender 50 is not ready, the time of both calender 30 and 50 has not been set up yet. The user therefore, needs to set up the time of one of either calenders. By finishing this step, the user may transfer the calender information from one side to another, and set up the time of calenders in this manner (S6).

[0025] In step S2, while calender 30 of facsimile 1 has been already set up (S2: yes), time setting of calender 50 of personal computer 2 is checked at the same time (S7). If the time of calender 50 has been set up (S7: yes), this will be indicated on display 46 of personal computer 2. Receiving this message, the user may choose the standard calender information of either side and input the selection by using keyboard 44 (S9). When the user selects the calender information of personal computer 2 (S9: PC), its calender information is transferred to facsimile 1 so as to set up the time of calender 30 (S10). On the other hand, if the user selects calender information from calender 30 of facsimile 1 (S9: FAX), its calender information is transferred to calender 50 of personal computer 2 so as to set the time.

[0026] Furthermore, if the time setting of both calender 30 and 50 is incorrect, the user may reset the time (S9) and return to step S5 so as to set the time of one of either calenders. In this manner, when the time of calender 30 and 50 has been set up, and even the time setting of both sides is correct, the user may select either side as a standard setting so as to set the time easily. Additionally, the user may select one side with the correct calender information as a standard setting, and automatically change the time of the other calender depending on his/her selection. Even when either side of time setting is incorrect, the user may reset the time of one side and transfer it to the other side of calender.

[0027] In said step S7, when the time setting of calender 50 is not ready (S7: no), the calender information of calender 30 is transferred from facsimile 1 to calender 50 of personal computer 2 (S12) so as to set the time. In this manner, by setting the time of one side of calender, time setting process for the other side of calender may be omitted. Moreover, the time and date of both calender 30 and 50 may be set identical to each other.

[0028] Additionally, selection process of step S9 may be operated by using selection key 31, which is equipped to facsimile apparatus 1. Regarding said process, in which calender information is transferred from one side to another so as to set the time of calender, this is controlled through CPU 10, 40 of facsimile 1 and personal computer 2.

[Function and Effect of the Invention]

[0029] As mentioned above, facsimile and computer system as indicated in claim 1, which is the facsimile apparatus equipped with the interface that can be connected to information processors such as computers, is provided with calender function and calender information to both sides so as to set the time. Either one of facsimile or information processor is provided with said clock function to set and adjust the date and time. If time of either one of facsimile or computer has been already set up, and the time of one side has not been set up yet, the other side is equipped with control means to transfer said calender information.

[0030] If the user sets the time of either one of facsimile apparatus or information processor such as a computer therefore, it is possible to transfer the calender information to the clock function of the other side. In this manner, by setting up the time of one side, the user may eliminate the time setting operation for the other, and even the time of both clock may be set identical.

[0031] Furthermore, facsimile and computer system as indicated in claim 2, which is the facsimile apparatus equipped with the interface that can be connected to information processors such as computers, is provided with calender function and calender information to both sides so as to set the year, month, date and time. Either one of facsimile or information processor is provided with said clock function to set and adjust the date and time. If the time of both facsimile or information processor has been already set up, selection means is provided to either side of facsimile apparatus or information processor so as to choose which side of calender information will be the standard, as well as control means to transmit the standard calender information to the clock function of the other

side.

[0032] In this manner, the user may choose either one of the clock function as the standard, by making a selection depending on easiness of operation or correct time as the standard. The time setting of clock function may be automatically processed by the selected calender of one side so as to set the clock function of the other side. Therefore, utility of connected computer and facsimile apparatus system may be improved as well.